AMENDMENTS TO THE SPECIFICATION

On page 1, please replace the paragraph beginning at the first line from the bottom with the following paragraph.

--However, lattice constants and thermal expansion coefficients of sapphire and silicon carbide and those of the Group III-V nitride compound semiconductor are different, and thus, there exists a problem such that defects or cracks occur in a grown Group III-V nitride compound semiconductor layer. Further, when manufacturing a laser diode (LD) comprising a semiconductor light-emitting device, it is difficult to form end faces of a resonator by performing cleavage. Therefore, development of a Group III-V nitride compound substrate without such problems has been sought.--

On page 2, please replace the paragraph beginning at line 8 with the following paragraph.

--However, the Group III-V nitride compound has a high saturated vapor pressure. Thus, a manufacturing method which is generally used when manufacturing a substrate made of silicon (Si) or a substrate made of gallium arsenide (GaAs) cannot be used for the manufacture of the substrate made of the Group III-V nitride compound. Heretofore a well-known method for manufacturing the substrate made of the Group III-V nitride compound is a method such that the Group III-V nitride compound is grown on a growth base made of sapphire or gallium arsenide using a MOCVD method, MBE method or hydride vapor phase deposition method. With the use of the hydride vapor phase deposition method, the Group III-V nitride compound substrate can be grown for several μm to several hundreds μm per one hour, and thus, the Group III-V nitride compound substrate can be grown to achieve a usable thickness for a short period of time. It has been reported that a GaN substrate is obtained using this method.--

On page 3, please replace the paragraph beginning at line 7 with the following paragraph.

--Further, disclosed in Japanese Patent Laid-open No. Hei 10-256662 is a method such that a thin GaN substrate with a thickness of about 300 μm is grown over a thick growth base made of sapphire with a thickness of greater than or equal to 1mm, and then the growth base is removed by means of grinding. With this method, by making the thickness of the growth

base larger, warping of the growth base caused by a heat treatment during the growth is suppressed, and deterioration in crystallinity of the GaN substrate caused by the warping of the growth base is prevented. However, with this method, stress increases as the growth base becomes thinner through removal of the growth base, and thus, cracks or defects occur in the GaN substrate. Further, since the growth base is thick, over or equal to 1mm, removal of the growth base is difficult.--

On page 4, please replace the paragraph beginning at line 8 with the following paragraph.

--The method of forming a substrate of the invention comprises growing, on the growth base with a thickness of smaller than or equal to 100μm, the substrate made of the Group III-V nitride compound with a thickness of larger than or equal to 200μm ~~is grown~~. Accordingly, occurrence of crack or the like in the substrate is effectively prevented, and thus, good-quality substrate is obtained.--

On page 5, please replace the paragraph beginning at line 20 with the following paragraph.

--Subsequently, as shown in Fig. 2 while heating the growth base 11, a GaN substrate 12 is grown on the growth base 11 (on the c-plane when the growth base 10 is made of sapphire, for example) by means of, e.g., hydride vapor phase deposition or halide vapor phase deposition, and then cooling is performed thereon. Here, the hydride vapor phase deposition is a vapor phase deposition method using hydride for reaction or carrying source gas whereas the halide vapor phase deposition is a vapor phase deposition method using halide for reaction or carrying source gas. More specifically, the growth base 11 is placed on a suscepter (not shown) and heated up to about 1000°C. Subsequently, while feeding nitrogen gas (N_2) as a carrier gas and ammonia gas (NH_3) as a nitrogen source, gallium chloride gas (GaCl) is supplied to the growth base 11 as a gallium source, and thus, the substrate 12 is grown, the gallium chloride gas being obtained by flowing hydrogen chloride (HCl) onto a simple substance of gallium (metal gallium) which is heated to about 850°C. In this case, this method is regarded as not only the hydride vapor phase deposition but also the halide vapor phase deposition in that hydrogen chloride is used as source gas.--

On page 7, please replace the paragraph beginning at line 4 from the bottom with the following paragraph.

--Due to the difference in thermal expansion coefficients of the substrate 12 and the growth base 11, warping occurs through cooling after growing the substrate 12. In the embodiment, however, by making the thickness of the growth base 11 smaller than or equal to 100μm and the thickness of the substrate 12 larger than or equal to 200 μm, stress caused by the warping is concentrated in the growth base 11, and thus, cracks occur exclusively in the growth base 11. Further, the thickness of substrate 12 relative to the growth base 11 is adjusted so that the curvature K of the substrate 12 is smaller than or equal to $0.03cm^{-1}$, and thus, the substrate 12 is free from cracks. Accordingly, with the embodiment even though cooling is performed after growing the substrate 12, occurrence of cracks is prevented in the substrate 12, thereby obtaining good-quality substrate 12.--

On page 9, please replace the paragraph beginning at line 16 with the following paragraph.

--Further, instead of hydrogen chloride, hydrogen fluoride (HF), hydrogen bromide (HBr) or hydrogen iodide (HI) may be used for hydride or halide. Instead of nitrogen gas, inert gas such as helium gas (He) or argon gas (Ar) may be used as the carrier gas. Further, hydrogen gas (H_2) or mixed gas including hydrogen gas may be also used as necessary.--

On page 13, please replace the paragraph beginning at line 1 with the following paragraph.

--In accordance with the calculation model shown in Fig. 6, the GaN substrates 12 with various thicknesses were grown by means of the HVPD over the growth bases 11 made of sapphire with various thicknesses, and the curvature thereof was obtained. That is, the growth bases 11 were heated to about 1000 °C, and then while feeding ammonia gas as nitrogen source at a velocity of 1 dm^3/min, gallium chloride gas was fed as gallium source, and thus, GaN substrates were grown, the gallium chloride gas being obtained by flowing hydrogen chloride gas at a velocity of $0.03dm^3$/min. onto a simple substance of gallium which was heated to approximately 850°C. Nitrogen gas was used as carrier gas and the nitrogen gas was fed at a

velocity of $1dm^3$/min. Subsequently, the GaN substrates were cooled down and irradiated with laser beams. The curvature of the substrates 12 was obtained by measuring their reflecting angles.--

On page 13, please replace the paragraph beginning at line 21 with the following paragraph.

-- That is, by making the thickness t_2 of the substrate 12 relative to the thickness t_1 of the growth base 11 ~~is set in order~~so that the curvature K of the substrate 12 is smaller than or equal to 0.03 cm^{-1}, the good-quality substrate 12 with few cracks is obtained. Further, in the case where the substrate 12 is thick, by making the growth base 11 thinner, the curvature K of the substrate 12 can be made smaller. Specially, in the case where the thickness t_1 of the growth base 11 is set smaller than or equal to 100μm, the curvature K of the substrate 12 can be made smaller than or equal to $0.03cm^{-1}$, further smaller than $0.025cm^{-1}$, even though the thickness of the substrate 12 is not so thick, e.g., about 600μm. Further, in a case where the growth base 11 made of compounds other than sapphire is used, the same result is obtained, but its detailed description is omitted here.--

On page 14, please replace the paragraph beginning at line 17 with the following paragraph.

--In this embodiment, the substrate 12 is grown in the following manner. First, the growth base 11 is placed in the reaction tube of the MOCVD apparatus (not shown). While ~~feeling~~feeding mixed gas of hydrogen gas (H_2) and nitrogen gas (N_2) as carrier gas in the reaction tube, the growth base 11 is heated to 1050°C, for example. Subsequently, while feeding, e.g., ammonia as a nitrogen source in the reaction tube, trimethylgallium (TMG;$(CH_3)_3Ga$) or triethylgallium (TEG;$((C_2H_5)_3Ga$) is fed as a gallium source, and thus the GaN substrate 12 is grown.--

On page 16, please replace the paragraph beginning at line 10 with the following paragraph.

--Further, in the embodiment described is the calculation method of the curvature K where the growth base 11 having hexagonal crystal system is grown on the substrate 12.

However, even though the growth base 11 has other crystal structures, a theoretical value of the curvature can be obtained using a numerical expression corresponding to the crystal structure~~,~~. ~~thus~~Thus, the invention is also applicable in this case.--

On page 16, please replace the paragraph beginning at line 20 with the following paragraph.

--As described above according to the method of forming a substrate of the invention, the thickness of the growth base is smaller than or equal to 100μm, the thickness of the substrate is larger than or equal to 200μm and the curvature of the substrate due to the difference in the thermal expansion coefficients of the growth base and the substrate is smaller than or equal to $0.03cm^{-1}$, and thus, occurrence of crack in the substrate is effectively prevented. Accordingly, a good-quality substrate is obtained.--